CLAIMS

What is claimed is:

1.   In a communication medium including a first set of n communication channels
and a second set of m communication channels, a method for selecting sensor channels in
said first set for quantifying crosstalk from said second set, the method comprising:

   a)   operating said first set of communication channels in a receive-only
mode;

   b)   choosing a subset S_1 of size m of said n communication channels;

   c)   estimating the expansion coefficients of said n communication channels
as a predefined function of said subset S_1 and signals received by said n communication
channels;

   d)   choosing a candidate subset S_2 of size m of said n communication
channels where the determinant of a matrix of said expansion coefficients corresponding to
said subset S_2 is greater than the determinant of a matrix of said expansion coefficients
corresponding to any other subset of size m of said n communication channels divided by a
predefined bound D;

   e)   calculating a threshold α;

   f)   choosing a final subset S_2 that is an α-amplifier of said threshold α; and

   g)   employing said communications channels in said final subset S_2 as sensor
channels for quantifying crosstalk from said second set of communication channels.

2.   A method according to claim 1 wherein said calculating a threshold step
comprises calculating α as a predefined function of said bound D and a predefined number
I of replacement iterations.

3.   A method according to claim 2 wherein said choosing a final subset step
comprises replacing any of said channels in said candidate subset S_2 during at most said I
replacement iterations.